INDEX TO AUTHORS.

A

Anson, M. L., and **Mirsky, A. E.** On some general properties of proteins, 169

B

Baas-Becking, Lourens G. M., and **Ross, P. A.** Notes on microspectra. I. The absorption spectrum of *Euglena*, 111

—. See FIELD and BAAS-BECKING, 445

Baumann, Emil J. See NOYES, FALK, and BAUMANN, 651

Bliss, Chester I. Temperature characteristics for prepupal development in *Drosophila melanogaster*, 467

Brody, Samuel, Sparrow, Chester D., and **Kibler, Hudson H.** Time relations of growth. II. The equivalence of age in mammals estimated on the basis of their growth constants, 285

C

Campbell, F. L. Relative susceptibility to arsenic in successive instars of the silkworm, 727

—. Speed of toxic action of arsenic in the silkworm, 433

Clark, Harry, and **Northrop, John H.** The inactivation of trypsin by x-rays, 87

Cole, William H. Temperature and locomotion in *Planaria*, 503

Cook, S. F. The effects of certain heavy metals on respiration, 575

Cook, S. F. A latent period in the action of copper on respiration, 631

—. The toxic action of copper on *Nitella*, 735

Criswell, Katharine I. See SHAUGHNESSY and CRISWELL, 123

Crozier, W. J. The distribution of temperature characteristics for biological processes; critical increments for heart rates, 531

—. Note on the distribution of critical temperatures for biological processes, 525

— and **Stier, T. J. B.** On the modification of temperature characteristics, 547

— and —. Temperature characteristic for locomotor activity in tent caterpillars, 49

D

Davidson, F. A. See GAINES and DAVIDSON, 325

Davies, P. A. Effect of high pressure on germination of seeds (*Medicago sativa* and *Melilotus alba*), 805

Dorcas, M. J. See OSTERHOUT and DORCAS, 255

Dubois, Olive E. See MCBAIN, DUBOIS, and HAY, 451

F

Falk, K. George. See NOYES, FALK, and BAUMANN, 651

Field, John, 2nd, and **Baas-Becking, Lourens G. M.** Light titrations. I. The starch-iodine reaction, 445

Fricke, Hugo. The electric capacity of suspensions with special reference to blood, 137

— and **Morse, Sterne.** The electric resistance and capacity of blood for frequencies between 800 and 4½ million cycles, 153

G

Gaines, W. L., and **Davidson, F. A.** The effect of advance in lactation and gestation on mammary activity, 325

Glaser, Otto. Temperature and heart rate in *Pterotrachea* and *Tiedemannia*, 269

—. Temperature and the mechanism of locomotion in *Paramecium*, 115

Grollman, Arthur. Ultrafiltration through collodion membranes, 813

H

Hammett, Frederick S. A comparison of bone growth in length with bone growth in weight, 63

Hawkins, James A. A discussion of recent studies on the metabolism of normal and malignant cells, 771

Hay, Kathleen G. See McBain, Dubois, and Hay, 451

Hitchcock, David I. The size of pores in collodion membranes, 755

—. Some consequences of the theory of membrane equilibria, 97

Hopkins, E. F., and **Wann, F. B.** The effect of the H ion concentration on the availability of iron for *Chlorella sp.*, 205

Hurd-Karrer, Annie May. A concentration gradient in corn stalks, 341

Hussey, Raymond G., and **Thompson, William R.** The effect of radiations from a mercury arc in quartz on enzymes. I. The effect of ultra-violet radiation on pepsin in solution, 217

— and —. The effect of radioactive radiations and x-rays on enzymes. IV. The effect of radiations from radium emanation on solutions of invertase, 211

— and —. V. The influence of variation of the thickness of the absorbing layer of solutions of pepsin upon the rate of radiochemical inactivation of the enzyme, 309

— and —. VI. The influence of variation of temperature upon the rate of radiochemical inactivation of solutions of pepsin by beta radiation, 315

I

Irwin, Marian. Accumulation of brilliant cresyl blue in the sap of living cells of *Nitella* in the presence of NH_3, 235

—. Mechanism of the accumulation of dye in *Nitella* on the basis of the entrance of the dye as undissociated molecules, 561

K

Kibler, Hudson H. See Brody, Sparrow, and Kibler, 285

Kramer, S. P. Bacterial filters. A preliminary note, 811

Kunitz, M. An empirical formula for the relation between viscosity of solution and volume of solute, 715

Kunitz, M. See NORTHROP and KUNITZ, 351
Kushner, Irving. The effect of x-rays on the irritability of muscles in the frog, 55

L

Lee, H. Atherton. Evidence of a factor associated with actively functioning tissues which gives to sugar-cane plants resistance to the invasion of fungi and other microorganisms, 381
Lucke, Baldwin, and **McCutcheon, Morton.** The effect of hydrogen ion concentration on swelling of cells, 709
—. See MCCUTCHEON and LUCKE, 697

M

McBain, James W., Dubois, Olive E., and **Hay, Kathleen G.** The salt error of indicators caused by standard alkaline buffers themselves, 451
McCay, C. M., and **Schmidt, Carl L. A.** The dissociation constants of racemic proline and certain related compounds, 333
McCutcheon, Morton, and **Lucke, Baldwin.** The kinetics of osmotic swelling in living cells, 697
—. See LUCKE and MCCUTCHEON, 709
Mirsky, A. E. See ANSON and MIRSKY, 169
Moore, A. R. Galvanic stimulation of luminescence in *Pelagia noctiluca*, 375
Morse, Sterne. See FRICKE and MORSE, 153
Mudd, Stuart. Electroendosmosis through mammalian serous membranes. II. Comparison of hydrogen ion reversal points with acetate and with citrate-phosphate buffers, 73
Mudd, Stuart. Electroendosmosis through mammalian serous membranes. III. The relation of current strength and specific resistance to rate of liquid transport. Transport rate with serum, 361
Murray, Cecil D. The physiological principle of minimum work applied to the angle of branching of arteries, 835
Murray, Henry A., Jr. Physiological ontogeny. A. Chicken embryos. II. Catabolism. Chemical changes in fertile eggs during incubation. Selection of standard conditions, 1
—. III. Weight and growth rate as functions of age, 39
—. VII. The concentration of the organic constituents and the calorific value as functions of age, 405
—. VIII. Accelerations of integration and differentiation during the embryonic period, 603
—. IX. The iodine reaction for the quantitative determination of glutathione in the tissues as a function of age, 621
—. X. The temperature characteristic for the contraction rate of isolated fragments of embryonic heart muscle, 781
—. XI. The pH, chloride, carbonic acid, and protein concentrations in the tissues as functions of age, 789

N

Northrop, John H. Carbon dioxide production and duration of life of *Drosophila* cultures, 319
—. A convenient method for the formol titration, 767

Northrop, John H. Duration of life of an aseptic *Drosophila* culture inbred in the dark for 230 generations, 763

—. The influence of the intensity of light on the rate of growth and duration of life of *Drosophila*, 81

—. The resistance of living organisms to digestion by pepsin or trypsin, 497

— and **Kunitz, M.** The combination of salts and proteins. II. A method for the determination of the concentration of combined ions from membrane potential measurements, 351

—. See CLARK and NORTHROP, 87

Noyes, Helen Miller, Falk, K. George, and **Baumann, Emil J.** Studies on enzyme action. XXXV. Lipase actions of extracts of tissues of rabbits at different ages, 651

O

Osterhout, W. J. V., and **Dorcas, M. J.** The penetration of CO_2 into living protoplasm, 255

Ottenberg, R., and **Stenbuck, F. A.** The isoelectric zone of typhoid agglutinin, 345

P

Parker, G. H. The carbon dioxide excreted in one minute by one centimeter of nerve-fiber, 191

Pearl, Raymond. A synthetic food medium for the cultivation of *Drosophila*. Preliminary note, 513

Ponder, Eric. A contribution to the theory of phagocytosis, 827

—. The shape of the mammalian erythrocyte and its respiratory function. I, 197

—. II, 625

Porosowsky, Yetta. See MURRAY, 781, 789

R

Redfield, A. C. See SOUTHWORTH and REDFIELD, 387

Ross, P. A. See BAAS-BECKING and ROSS, 111

S

Sands, Harold C. A micro dissection of the pachytene threads of *Tradescantia virginica* L. with observations on some aspects of mitosis, 181

Schmidt, Carl L. A. See MCCAY and SCHMIDT, 333

Shaughnessy, Howard J., and **Criswell, Katharine I.** Studies on salt action. X. The influence of electrolytes upon the viability and electrophoretic migration of *Bacterium coli*, 123

Southworth, F. C., Jr., and **Redfield, A. C.** The transport of gas by the blood of the turtle, 387

Sparrow, Chester D. See BRODY, SPARROW, and KIBLER, 285

Sponsler, O. L. Molecular structure of plant fibers as determined by x-rays, 677

—. X-ray diffraction patterns from plant fibers, 221

Stenbuck, F. A. See OTTENBERG and STENBUCK, 345

Stier, T. J. B. Reversal of phototropism in *Diemyctylus viridescens*, 521

—. See CROZIER and STIER, 49, 547

T

Thompson, William R. See HUSSEY and THOMPSON, 211, 217, 309, 315

W

Wann, F. B. See HOPKINS and WANN, 205

INDEX TO SUBJECTS.

A

Absorption spectrum:
Euglena (BAAS-BECKING and ROSS) 111

Acetate:
Hydrogen ion reversal points with citrate-phosphate buffers and with (MUDD) 73

Age:
Embryo chicken, calorific value as function (MURRAY) 405
— —, carbonic acid concentration in tissues as function (MURRAY) 789
— —, chloride concentration in tissues as function (MURRAY) 789
— —, concentration of organic constituents as function (MURRAY) 405
— —, growth rate as function (MURRAY) 39
— —, hydrogen ion concentration in tissues as function (MURRAY) 789
— —, iodine reaction for quantitative determination of glutathione in tissues as function (MURRAY) 621
— —, protein concentration in tissues as function (MURRAY) 789
— —, weight as function (MURRAY) 39
Mammals, equivalence, estimated on basis of growth constants (BRODY, SPARROW, and KIBLER) 285

Agglutinin:
Typhoid, isoelectric zone (OTTENBERG and STENBUCK) 345

Alba:
Melilotus, germination, effect of high pressure (DAVIES) 805

Alkali:
Buffer, standard, cause of salt error in indicators (MCBAIN, DUBOIS, and HAY) 451

Ammonia:
Brilliant cresyl blue, accumulation in sap of living *Nitella* cells in presence of (IRWIN) 235

Arsenic:
Silkworm, relative susceptibility of successive instars (CAMPBELL) 727
—, speed of toxic action (CAMPBELL) 433

Artery:
Branching, physiological principle of minimum work applied to angle (MURRAY) 835

B

Bacillus:
coli, electrophoretic migration, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
—, viability, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
—. *See also Bacterium coli.*

Bacterium:
coli, electrophoretic migration, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
—, viability, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
—. *See also Bacillus coli.*
Filters (KRAMER) 811
Beta radiation:
Radiochemical inactivation of pepsin solutions, influence of temperature variation (HUSSEY and THOMPSON) 315
Biology:
Critical temperatures, distribution for biological processes (CROZIER) 525
Temperature characteristics, distribution for biological processes (CROZIER) 531
Blood:
Electric capacity for frequencies between 800 and 4½ million cycles (FRICKE and MORSE) 153
— — of suspensions (FRICKE) 137
— resistance for frequencies between 800 and 4½ million cycles (FRICKE and MORSE) 153
Gas, transport, in turtle (SOUTHWORTH and REDFIELD) 387
Bone:
Growth, in length and weight (HAMMETT) 63
Brilliant cresyl blue:
Accumulation in sap of living *Nitella* cells, in presence of ammonia (IRWIN) 235
Buffer:
Alkaline, standard, cause of salt error in indicator (McBAIN, DUBOIS, and HAY) 451
Hydrogen ion reversal points with acetate and with citrate-phosphate buffers (MUDD) 73

C

Capacity:
Electric, blood, for frequencies between 800 and 4½ million cycles (FRICKE and MORSE) 153
—, — suspensions (FRICKE) 137
Carbon dioxide:
Drosophila cultures, production during life (NORTHROP) 319
Nerve-fiber, excretion (PARKER) 191
Penetration, into living protoplasm (OSTERHOUT and DORCAS) 255
Carbonic acid:
Tissue, concentration, function of chicken embryo age (MURRAY) 789
Catabolism:
Egg, fertile, during incubation (MURRAY) 1
Caterpillar:
Tent, locomotion, temperature characteristic (CROZIER and STIER) 49
Cell:
Living, kinetics of osmotic swelling (McCUTCHEON and LUCKE) 697
Metabolism, malignant (HAWKINS) 771
—, normal (HAWKINS) 771
Swelling, effect of hydrogen ion concentration (LUCKE and McCUTCHEON) 709

Cell sap:
Nitella, living, accumulation of brilliant cresyl blue in presence of ammonia (IRWIN) 235
Chicken:
Embryo. II (MURRAY) 1
—. III (MURRAY) 39
—. VII (MURRAY) 405
—. VIII (MURRAY) 603
—. IX (MURRAY) 621
—. X (MURRAY) 781
—. XI (MURRAY) 789
Chlorella:
Hydrogen ion concentration, effect on iron availability (HOPKINS and WANN) 205
Chloride:
Tissue, concentration, function of chicken embryo age (MURRAY) 789
Citrate:
-phosphate, hydrogen ion reversal points with acetate buffers and with (MUDD) 73
Coli:
Bacillus, electrophoretic migration, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
—, viability, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
Bacterium, electrophoretic migration, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
—, viability, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
Collodion:
Membrane, size of pores (HITCHCOCK) 755
—, ultrafiltration through (GROLLMAN) 813
Copper:
Nitella, toxic action on, of (COOK) 735
Respiration, latent period in action on, of (COOK) 631
Corn:
Stalk, concentration gradient (HURD-KARRER) 341
Cultivation:
Drosophila, carbon dioxide production and life duration (NORTHROP) 319
—, life duration of aseptic culture inbred in dark for 230 generations (NORTHROP) 763
—, synthetic food medium (PEARL) 513

D

Diemyctylus:
viridescens, reversal of phototropism (STIER) 521
Digestion:
Pepsin, resistance of living organisms (NORTHROP) 497
Trypsin, resistance of living organisms (NORTHROP) 497
Dissociation:
Constant, racemic proline and related compounds (MCCAY and SCHMIDT) 333
Drosophila:
Carbon dioxide, production in cultures during life (NORTHROP) 319
Cultivation, life duration of aseptic culture inbred in dark for 230 generations (NORTHROP) 763
—, synthetic food medium (PEARL) 513
Light intensity, influence on growth rate (NORTHROP) 81

Drosophila—*continued:*
Light intensity, influence on life duration (NORTHROP) 81
melanogaster, prepupal development, temperature characteristic (BLISS) 467
Dye:
Accumulation, mechanism in *Nitella*, based on entrance of dye as undissociated molecules (IRWIN) 561

E

Egg:
Catabolism, fertile, during incubation (MURRAY) 1
Electric:
Capacity of blood for frequencies between 800 and 4½ million cycles (FRICKE and MORSE) 153
— — suspensions with special reference to blood (FRICKE) 137
Endosmosis, of mammalian serous membranes. II (MUDD) 73
—, — — —. III (MUDD) 361
Resistance, of blood, for frequencies between 800 and 4½ million cycles (FRICKE and MORSE) 153
Electrolyte:
Bacterium coli, electrophoretic migration, influence on, of (SHAUGHNESSY and CRISWELL) 123
— —, viability, influence on, of (SHAUGHNESSY and CRISWELL) 123
Electrophoresis:
Bacterium coli, electrophoretic migration, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
Embryo:
Chicken. II (MURRAY) 1
—. III (MURRAY) 39
—. VII (MURRAY) 405
—. VIII (MURRAY) 603
—. IX (MURRAY) 621
—. X (MURRAY) 781
—. XI (MURRAY) 789
Differentiation, acceleration during embryonic period of chicken (MURRAY) 603
Heart muscle, chicken, temperature characteristic for contraction rate of isolated fragments (MURRAY) 781
Integration, acceleration during embryonic period of chicken (MURRAY) 603
Endosmosis:
Electric, of mammalian serous membranes. II (MUDD) 73
—, — — —. III (MUDD) 361
Enzyme:
Action. XXXV (NOYES, FALK, and BAUMANN) 651
Radiations from mercury arc in quartz, effect of, on. I (HUSSEY and THOMPSON) 217
Radioactive radiations, effect of, on. IV (HUSSEY and THOMPSON) 211
— —, — —. V (HUSSEY and THOMPSON) 309
— —, — —. VI (HUSSEY and THOMPSON) 315
Radiochemical inactivation, influence of variation of absorbing layer of pepsin solutions on rate (HUSSEY and THOMPSON) 309
Equilibrium:
Membrane (HITCHCOCK) 97

Erythrocyte:
Respiration, mammalian, relation of shape. I (PONDER) 197
—, —, — —. II (PONDER) 625
Euglena:
Absorption spectrum (BAAS-BECKING and ROSS) 111
Excretion:
Carbon dioxide, by nerve-fiber (PARKER) 191

F

Filter:
Bacterial (KRAMER) 811
Formol:
Titration (NORTHROP) 767
Frog:
Muscle, irritability, effect of x-rays (KUSHNER) 55
Fungus:
Invasion, resistance of sugar-cane plant tissues (LEE) 381

G

Galvanic:
Stimulation of luminescence in *Pelagia noctiluca* (MOORE) 375
Gas:
Blood, turtle, transport (SOUTHWORTH and REDFIELD) 387
Germination:
Seeds, high pressure, effect of, on (DAVIES) 805
Gestation:
Mammary activity, effect on, of (GAINES and DAVIDSON) 325
Gland:
Mammary, activity, effect of advance in lactation (GAINES and DAVIDSON) 325
Gland—*continued:*
Mammary, activity, effect of gestation (GAINES and DAVIDSON) 325
Glutathione:
Tissues, quantitative determination by iodine reaction, function of chicken embryo age (MURRAY) 621
Growth:
Age, chicken embryo, function (MURRAY) 39
Bone, length and weight (HAMMETT) 63
Drosophila, light intensity, influence on rate (NORTHROP) 81
Mammals, constants used as basis for age equivalence estimation (BRODY, SPARROW, and KIBLER) 285
Time relations. II (BRODY, SPARROW, and KIBLER) 285

H

Heart:
Critical increments for rate (CROZIER) 531
Muscle, chicken embryo, temperature characteristic for contraction rate of isolated fragments (MURRAY) 781
Pterotrachea, influence of temperature on rate (GLASER) 269
Tiedemannia, influence of temperature on rate (GLASER) 269
Hydrogen ion:
Concentration, effect on availability of iron for *Chlorella* (HOPKINS and WANN) 205
—, — — swelling of cells (LUCKE and MCCUTCHEON) 709

Hydrogen ion—*continued:*
Concentration in tissues, function of chicken embryo age (MURRAY) 789
Reversal points with acetate and with citrate buffers (MUDD) 73

I

Inactivation:
Radiochemical, pepsin solutions, influence of temperature variation on rate of inactivation by beta radiation (HUSSEY and THOMPSON) 315
Trypsin, by x-rays (CLARK and NORTHROP) 87
Incubation:
Egg, fertile, catabolism during (MURRAY) 1
Indicator:
Salt error, caused by standard alkaline buffers (MCBAIN, DUBOIS, and HAY) 451
Instar:
Silkworm, successive, relative susceptibility to arsenic (CAMPBELL) 727
Intensity:
Light, *Drosophila*, influence on growth rate (NORTHROP) 81
—, —, — — life duration (NORTHROP) 81
Invertase:
Solutions, effect of radium emanation radiations (HUSSEY and THOMPSON) 211
Iodine:
Reaction, for quantitative determination of glutathione in tissues, function of chicken embryo age (MURRAY) 621
Iodine—*continued:*
Starch-, reaction, in light titrations (FIELD and BAAS-BECKING) 445
Ion:
Combined, concentration, determination from membrane potential measurements (NORTHROP and KUNITZ) 351
Iron:
Chlorella, effect of hydrogen ion concentration on availability (HOPKINS and WANN) 205
Isoelectric zone:
Typhoid agglutinin (OTTENBERG and STENBUCK) 345

K

Kinetics:
Osmotic swelling, living cells (MCCUTCHEON and LUCKE) 697

L

Lactation:
Mammary activity, effect of advance (GAINES and DAVIDSON) 325
Light:
Drosophila, influence of intensity on growth rate (NORTHROP) 81
—, — — — on life duration (NORTHROP) 81
Titrations. I (FIELD and BAAS-BECKING) 445
Lipase:
Actions of tissue extracts of rabbits at different ages (NOYES, FALK, and BAUMANN) 651
Locomotion:
Caterpillar, tent, temperature characteristic (CROZIER and STIER) 49

Locomotion—*continued:*
Paramecium, effect of temperature (GLASER) 115
Planaria, effect of temperature (COLE) 503
Luminescence:
Pelagia noctiluca, galvanic stimulation (MOORE) 375

M

Mammal:
Age equivalence, estimated on basis of growth constants (BRODY, SPARROW, and KIBLER) 285
Erythrocyte, respiration, relation of shape. I (PONDER) 197
—, —, — —. II (PONDER) 625
Membrane, serous, electroendosmosis. II (MUDD) 73
—, —, —. III (MUDD) 361
Mammary:
See Gland.
Medicago:
sativa, germination, effect of high pressure (DAVIES) 805
Medium:
Synthetic food, for *Drosophila* cultivation (PEARL) 513
Melanogaster:
Drosophila, prepupal development, temperature characteristic (BLISS) 467
Melilotus:
alba, germination, effect of high pressure (DAVIES) 805
Membrane:
Collodion, size of pores (HITCHCOCK) 755
—, ultrafiltration through (GROLLMAN) 813
Membrane—*continued:*
Equilibrium (HITCHCOCK) 97
Potential measurements, combined ion concentration determined from (NORTHROP and KUNITZ) 351
Serous, mammalian, electroendosmosis. II (MUDD) 73
—, —, —. III (MUDD) 361
Mercury arc:
Quartz, radiations, effect on enzymes. I (HUSSEY and THOMPSON) 217
Metabolism:
Cell, malignant (HAWKINS) 771
—, normal (HAWKINS) 771
Metal:
Heavy, effect on respiration (COOK) 575
Microorganism:
Invasion, resistance of sugarcane plant tissues (LEE) 381
Microspectra:
I (BAAS-BECKING and ROSS) 111
Mitosis:
Tradescantia virginica, and micro dissection of pachytene threads (SANDS) 181
Muscle:
Frog, irritability, effect of x-rays (KUSHNER) 55
Heart, chicken embryo, temperature characteristic for contraction rate of isolated fragments (MURRAY) 781

N

Nerve:
-fiber, carbon dioxide excretion (PARKER) 191

Nitella:
Copper, toxic action of, on (Cook) 735
Mechanism of dye accumulation, based on entrance of dye as undissociated molecules (Irwin) 561
Sap, living cells, accumulation of brilliant cresyl blue in presence of ammonia (Irwin) 235
Noctiluca:
Pelagia, luminescence, galvanic stimulation (Moore) 375

O

Ontogeny:
Physiology. A. II (Murray) 1
—. A. III (Murray) 39
—. A. VII (Murray) 405
—. A. VIII (Murray) 603
—. A. IX (Murray) 621
—. A. X (Murray) 781
—. A. XI (Murray) 789
Organic:
Embryo chicken, concentration of organic constituents as function of age (Murray) 405
Organism:
Living, resistance to pepsin digestion (Northrop) 497
—, — — trypsin digestion (Northrop) 497
Osmosis:
Swelling, osmotic, kinetics in living cells (McCutcheon and Lucke) 697

P

Paramecium:
Locomotion, effect of temperature (Glaser) 115
Pelagia:
noctiluca, luminescence, galvanic stimulation (Moore) 375
Penetration:
Carbon dioxide, into living protoplasm (Osterhout and Dorcas) 255
Pepsin:
Digestion, resistance of living organisms (Northrop) 497
Solution, absorbing layer, influence of variation of thickness on radiochemical inactivation rate of enzyme (Hussey and Thompson) 309
—, radiochemical inactivation by beta radiation, influence of temperature variation (Hussey and Thompson) 315
Ultra-violet radiation, effect on pepsin in solution (Hussey and Thompson) 217
Phagocytosis:
Theory (Ponder) 827
Phosphate:
Citrate-, hydrogen ion reversal points with acetate buffers and with (Mudd) 73
Phototropism:
Diemyctylus viridescens, reversal (Stier) 521
Physiology:
Artery, angle of branching, physiological principle of minimum work applied to (Murray) 835
Ontogeny. A. II (Murray) 1
—. A. III (Murray) 39

Physiology—*continued:*
Ontogeny. A. VII (MURRAY) 405
—. A. VIII (MURRAY) 603
—. A. IX (MURRAY) 621
—. A. X (MURRAY) 781
—. A. XI (MURRAY) 789
Planaria:
Locomotion, effect of temperature (COLE) 503
Plant:
Fibers, molecular structure determined by x-rays (SPONSLER) 677
—, x-ray diffraction patterns (SPONSLER) 221
Tissue, sugar-cane, resistance to invasion of fungi and other microorganisms (LEE) 381
Pore:
Collodion membrane, size (HITCHCOCK) 755
Potential:
Membrane, measurements, combined ion concentration determined from (NORTHROP and KUNITZ) 351
Prepupa:
Drosophila melanogaster, temperature characteristics for prepupal development (BLISS) 467
Pressure:
Germination of seeds, effect on, of (DAVIES) 805
Proline:
Racemic, and related compounds, dissociation constants (MCCAY and SCHMIDT) 333
Protein(s):
Properties (ANSON and MIRSKY) 169
Protein(s)—*continued:*
Salts, combinations with. II (NORTHROP and KUNITZ) 351
Tissue, concentration, function of chicken embryo age (MURRAY) 789
Protoplasm:
Living, penetration of carbon dioxide (OSTERHOUT and DORCAS) 255
Pterotrachea:
Heart rate, influence of temperature (GLASER) 269

Q

Quartz:
Mercury arc, radiations, effect on enzymes. I (HUSSEY and THOMPSON) 217

R

Rabbit:
Tissue extracts, lipase actions at different ages (NOYES, FALK, and BAUMANN) 651
Radiation:
Mercury arc in quartz, effect on enzymes. I (HUSSEY and THOMPSON) 217
Radioactive, effect on enzymes. IV (HUSSEY and THOMPSON) 211
—, — — —. V (HUSSEY and THOMPSON) 309
—, — — —. VI (HUSSEY and THOMPSON) 315
Radium emanation, effect on invertase solutions (HUSSEY and THOMPSON) 211
Ultra-violet, effect on pepsin in solution (HUSSEY and THOMPSON) 217

Radioactivity:
Radiations, radioactive, effect on enzymes. IV (HUSSEY and THOMPSON) 211
—, —, — —. V (HUSSEY and THOMPSON) 309
—, —, — —. VI (HUSSEY and THOMPSON) 315
Radiochemistry:
Inactivation, radiochemical, of enzyme, influence of variation of thickness of absorbing layer of pepsin solutions (HUSSEY and THOMPSON) 309
Radium:
Emanation, effect of radiations on invertase solutions (HUSSEY and THOMPSON) 211
Reaction:
Iodine, for quantitative determination of glutathione in tissues, function of chicken embryo age (MURRAY) 621
Starch-iodine, in light titrations (FIELD and BAAS-BECKING) 445
Resistance:
Blood, electric, for frequencies between 800 and 4½ million cycles (FRICKE and MORSE) 153
Liquid, relation to rate of transport (MUDD) 361
Organisms, living, to pepsin digestion (NORTHROP) 497
—, —, — trypsin digestion (NORTHROP) 497
Tissues, sugar-cane plants, invaded by fungi and other microorganisms (LEE) 381
Respiration:
Erythrocyte, mammalian, relation of shape. I (PONDER) 197
Respiration—*continued:*
Erythrocyte, mammalian relation of shape. II (PONDER) 625
Copper, latent period in action of, on (COOK) 631
Metals, heavy, effect of, on (COOK) 575
Roentgen rays:
Diffraction patterns from plant fibers (SPONSLER) 221
Enzymes, effect on, of. IV (HUSSEY and THOMPSON) 211
—, — —, —. V (HUSSEY and THOMPSON) 309
—, — —, —. VI (HUSSEY and THOMPSON) 315
Irritability of frog muscle, effect on, of (KUSHNER) 55
Plant fibers, molecular structure determined by x-rays (SPONSLER) 677
Trypsin, inactivation (CLARK and NORTHROP) 87

S

Salt(s):
Action. X (SHAUGHNESSY and CRISWELL) 123
Indicator, error caused by standard alkaline buffers (MCBAIN, DUBOIS, and HAY) 451
Proteins, combinations with. II (NORTHROP and KUNITZ) 351
Sativa:
Medicago, germination, effect of high pressure (DAVIES) 805
Seed:
Germination, effect of high pressure (DAVIES) 805
Serous membrane:
See Membrane.

Serum:
Transport rate (MUDD) 361
Silkworm:
Arsenic, speed of toxic action (CAMPBELL) 433
—, susceptibility of successive instars (CAMPBELL) 727
Solution:
Invertase, radium emanation radiations, effect of, on (HUSSEY and THOMPSON) 211
Pepsin, absorbing layer, influence of variation in thickness on radiochemical inactivation of enzyme (HUSSEY and THOMPSON) 309
—, radiochemical inactivation by beta radiation, influence of temperature variation (HUSSEY and THOMPSON) 315
—, ultra-violet radiation, effect of, on (HUSSEY and THOMPSON) 217
Viscosity, and volume of solute, empirical formula for relation between (KUNITZ) 715
Starch:
-iodine reaction, in light titrations (FIELD and BAAS-BECKING) 445
Stimulation:
Galvanic, luminescence, in *Pelagia noctiluca* (MOORE) 375
Susceptibility:
Arsenic, susceptibility of successive instars of silkworm (CAMPBELL) 727
Suspension:
Electric capacity, with special reference to blood (FRICKE) 137
Swelling:
Cell, effect of hydrogen ion concentration (LUCKE and MCCUTCHEON) 709
Osmotic, in living cells, kinetics (MCCUTCHEON and LUCKE) 697

T

Temperature:
Biological processes, distribution of critical temperature (CROZIER) 525
— —, — — temperature characteristics (CROZIER) 531
Caterpillar, tent, locomotor activity, temperature characteristic (CROZIER and STIER) 49
Drosophila melanogaster, prepupal development, temperature characteristic (BLISS) 467
Heart muscle, chicken embryos, temperature characteristic for contraction rate of isolated fragments (MURRAY) 781
Modification of temperature characteristics (CROZIER and STIER) 547
Paramecium, locomotion, effect on, of (GLASER) 115
Pepsin solutions, variation, influence on rate of radiochemical inactivation by beta radiation (HUSSEY and THOMPSON) 315
Planaria, effect on, of (COLE) 503
Pterotrachea, influence on heart rate (GLASER) 269
Tiedemannia, influence on heart rate (GLASER) 269

Tiedemannia:
Heart rate, influence of temperature (GLASER) 269
Tissue:
Carbonic acid concentration, function of chicken embryo age (MURRAY) 789
Chloride concentration, function of chicken embryo age (MURRAY) 789
Glutathione, quantitative determination by iodine reaction, function of chicken embryo age (MURRAY) 621
Hydrogen ion concentration, function of chicken embryo age (MURRAY) 789
Plant, sugar-cane, resistance to invasion of fungi and other microorganisms (LEE) 381
Protein concentration, function of chicken embryo age (MURRAY) 789
Rabbit, extracts, lipase actions at different ages (NOYES, FALK, and BAUMANN) 651
Titration:
Formol (NORTHROP) 767
Light. I (FIELD and BAAS-BECKING) 445
Toxicity:
Arsenic, silkworm (CAMPBELL) 433
Copper, *Nitella* (COOK) 735
Tradescantia:
virginica, micro dissection of pachytene threads with some aspects on mitosis (SANDS) 181
Trypsin:
Digestion, resistance of living organisms (NORTHROP) 497
Trypsin—*continued:*
Inactivation, by x-rays (CLARK and NORTHROP) 87
Turtle:
Blood, transport of gas (SOUTHWORTH and REDFIELD) 387
Typhoid:
Agglutinin, isoelectric zone (OTTENBERG and STENBUCK) 345

U

Ultrafiltration:
Collodion membranes (GROLLMAN) 813
Ultra-violet:
Radiation, effect on pepsin in solution (HUSSEY and THOMPSON) 217

V

Viability:
Bacterium coli, influence of electrolytes (SHAUGHNESSY and CRISWELL) 123
Virginica:
Tradescantia, micro dissection of pachytene threads, with some aspects on mitosis (SANDS) 181
Viridescens:
Diemyctylus, reversal of phototropism (STIER) 521
Viscosity:
Solution, and volume of solute, empirical formula for relation between (KUNITZ) 715

W

Weight:
Embryo chicken, function of age (MURRAY) 39
Growth of bone, and length (HAMMETT) 63

X

X-rays:
See Roentgen rays.